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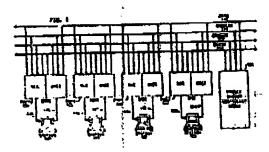
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- the branchasting emphysmest for local mes networks.
- In a Local Area Natwork (LAN) comprising a plurality of stations having associated ports where each port has a unique accrease, an artisugement for providing salective broadbasting to a subset of the plurality of stations is; desclosed. A transmitted of the stations designates the subset by specifying but, or more receiving stations. Thereafter, the transmitting suttim generalities a single data measure. The parties apposited address of only one member of the subset A packet switch controller defines are subset. The parties which insulates witch an area to subset. The parties are the appropriate mass to the transmitten controller specified address and the address a state measure, the specified address and the address and the subset to determine it the transmitted controller and the determine and the matter of the subset to determine it the transmitted controller in the determine it the transmitted controller in the determine of the transmitted controller in the determined station as a mainter of the subset.



Describlion

#### SELECTIVE BROADCASTING ARRANGEMENT FOR LOCAL AREA NETWORKS

Technical Field

This injention relates to Local Area Networks (LANA) and, in perticular, to an arrangement which provides selective broadcasting of peoket data massages to a subset of a plurality of receiving stations comprising a LAN.

Problem i

Lorial Area Networks interconnect it plurality of stations being executed port circuits. The stations exchange packet-type data massegue via the associated port circuits over a shared bus arrangement. A packet comprises a data massegue and an address which defines a unique receiving port and an associated station to which the packet is directed. Each port has a unique address so that packets can be exchanged between a transmitting station and a specified one of the receiving stations.

Typically, a packet is exchanged between one transmitting and one receiving station; However, in a shared multi-user environment, for elumpia, when each employee in a single office columns to the earns network vis his/her own terminal, station usens often ray on the receipt of common station time pariorm, tasks. The need to dissemiliate common information to the plurality of attitions in a prentice information to the plurality of attitions in a prentice to expendicular and environment. Therefore, it would be administration to provide the capebility to dissemiliate pointmon information to a plurality of attitional using a shiple transmission.

The accepted practice of dissernisting common information to members of a network is to broadcast a data message. One of the most common broadcasting methods is to utilize a gendra address. In addition to the unique address assended with each part, each port size has a generic address. When a transmitting elation wishes to transmit a common data message to a plurality of stations, it transmits a packet containing the generic address. Each station of the network receives the transmitted data massage of a shade part has the generic address. The use of a shade particular address allows the transmitting station to address allows the transmitting station address allows the transmitting station address allowers. Several mathods eath by which to achieve selective broadcasting to a subset of stations. One method broadcasting to a subset of stations. One method broadcasting to a subset of stations of accepted address to a single post. Each generic address to the pre-excipations of accepts of receiving stations with a perfectler subset of receiving stations with a perfectler subset of receiving stations with a perfectler subset of receiving stations with a constrol data measure.

There are soveral problems passociated with multiple generic stidents arrangements. One problem is that each port must maintain a first of the multiple generic addresses by which it can receive massages. The maintenance of such a fiel concurred

large amounts of mismary space. Another position is that substitutial amounts of advance decoding limb in required. Each part determines if a transmitted data message is intended for the part's essociated station by matching a transmitted eddrasts against the list of generic addresses. A further problem is that all receiving subsets are productionally, that is, all generic addresses are productional to each port, and therefore the grantion of a new subset, of receiving stations is practicled.

Another method of achieving extently bloadcasting is to duplicate the data message and transmit to each selected station a separate, but duplikated data message. The problem with this method is that a substantial emount of this is consumpt by the substantial emount of the is consumpt by the measage for each selected receiving station. Another problem is that duplicated transmissions industry, persent other transmissions from occurring until such time as the presenting station concludes its broadcast-

Shared LAN arrangements are becoming intreasingly popular and therefore, an improved explability to broadcast continuo information to defined subsets of receiving latitors is reseted. The presently smalleble selective broadcast techniques are killed unitageous because of the problems desiriting

Bolution

The above desprised problems are overcome and a technical advisce in the field is additived by providing a selective providing attention providing a selective providing attention advises together with a mask when it trensmits a single common data injection. The station address together with the mask permits a transmit a single common data injection with the mask permits the subset of redelving stations which are to income the common data message.

The common data message.

To achieve salective transconting, a transmitting station establishes a intradest cell to a chiefproteid subject of receiving stations. A single chite-message is generated with an address of one of the designated receiving stations. The see-classed point able which provides a transition includes a transition able which provides a transit or the specific station address and the mask effectively creative station stations and the mask effectively creative address and the mask effectively creative which this comprising that specific station address which this care bits. The definition of "don" core bits creates the extension address which industry the first two generic ambest address which industry the sations to receiving stations.

defines the subset of receiving stations.
For example, issume only a two left elidiples and a two left muck. Farmer, absume that the addresses of the receiving station are 01 and 00, respectively. To reach both stations, the mask provided defines that the address this in the abcord left position, i.e., 1 and 0, respectively, are "don't care" bits. Therefore, the Venemitted effective generic address is a tix white

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X Indicates "don't care" and only ports having addresses with a 0 in the first bit position will receive the pecket. In this manner, an effective genute subset extress is created. The address portion of the data packet comprises the transmitted station address and the press. The transmitting port applies the pecket to the LAN busses and temperates the

packet to the receiving stations.

Each receiving portion of each port centains mask decoding circuitry which decodes the station address and the peak to determine if the transmitted dress and the peak to determine if the transmitted data message is intended for its associated station at a member of the designated subset. The decoding circulary provides the circuit logic to determine which bits in the recoloud acciress comprise the "clon't cers" bits. As previously described with respect to the example, the effective generic address is effectively a CX. Therefore, the only significant bit to consider in determining an appropriate receiving port is the bit in the first bit eppropriate receiving port is the bit in the tirst bit position, that is, a 0. If the offective generic address matches a portion of the receiving port's unique address, that is, if the bit in the first bit position of the port's unique address is a 0, the port applies the transmitted data measure to its associated station since the station is a member of the designated station and the designated station is a member of the designated subset of receiving stations. However, if the effective generic; address does not match a portion of the port's unique actriess, that is, the bit in the first bit position of the port's unique address is not a Q, the port rejects the date message since its associated station is not included in the designated subset of receiving stations.

The above described musicing arrangement for effectively creating generic subset addresses provides selective broadcasting capability for a LAN. This atrangement eliminates the need for each port to have a flat of multiple generic eddresses and thereby conserves meniory space. Additionally, new subsets may be created with each transmitted peolog since generic addresses are not presented to each port. The above-described arrangement turther simplifies the address deciding process by including in each port non-complex circuitry for decoding the station address and the mask. A turber adventage of this arrangement is that only a single data measure is generated. This eliminates the need for duplicating the same data measure and prevents tying-up the network for extended periods of Sing.

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Rick Description of the Drawing These and other adventages of the Invention may be better understood from a reading of the following description of one possible assemblery embodiment taken in conjunction with the drawings in which:
Fig. 1 Stantages a block diagram of a Local

Area Network for exchanging data puckets of information between a phrelity of transmitting and receiving stations;

FIG. 2 Sustrates the details of the port having on associated frameritting and receiving size.

FIG. 3 illustrates the details of an address/ mask comparator comprising the port circuit

Bustrated in PG 2:

FIG. 4 Mustrate us the format of a data prober; Fig. 5 Manyston the details of a m translation table; and

FIG. 6 Humanias a matrix table of examples of possible subsets resulting from the gapet when of different emphed addresses utilizing a bre bit address and a two bit mask.

#### Detailed Description

Local Area Natwork

Fig. 1 illustrates is block diagram of a Local Area Network. This LAN comprises transmissing and receiving stations 100 through 103 having aspectated purts 104 through 107. A shared bus structure having that 110, address 111, control 112 and stock 113 bespec, and picket switch controller (PSC) 108. The LAN intercorrects transmitting and receiving stations 100 through 103 utilizing the allered bus. stations 100 through 103 utilizing the saping 505, structure which operates under control of PGC 103 Data packets are inschanged between stations 100 through 103 over the bas structure. For packet description, only leur stations are chosen; isosepher, a LAN may comprise a greater plurally of stations. Exalant: 100 through 103 may be any type of data transmitting device such as terminals of p computers (PCs). Each station 100 thro connects to associated ports 104 through 107 que paths 114 through 121, respectively. Pers 104 through 107 selve as interfaces to the shered notwork bus structure for the receipt and transmission of packets.

The common setwork bus structure provides the transmission medium for exchanging date pectuals between stations 100 through 100. The bits adjusting comprises data bus 110, address bus 111, control bus 112 and clock bus 118. For ease of description. the actives bus (111) and the data take (112) are shown separately, However, in some LAN errangements, the adoless and data information are confined to a stopic transmission but and are not separated as attern. The address precipies the data message portion on the combined address/data last so that the address portion of the data packet is read first in order to determine if the associated data maxing is mancied for a port's associated distributions in the maxing is mancied for a port's associated station. Assume that for the remaining position of this description that the busines are separate and their address precedes the data massing. The interface business intercomment parts 164 through 107 and (PSC) 108. PSC 108 controls the address ment of connections between stations 164 through 103 for the purposes of suchassing the maximum. 103 for the purposes of exchanging data pecials between a trefamiling one and a redeling one of

the stations.

Establishment of a Connection

To establish a consection between at joint be stations of the LAN, such as station the said station 101, PSC 106 extablishes the condense in the tonzening majorar, A user at station 100 inflactivity goes "off-hook". An "off-hook" indeption is applied from station 100 to the transmit COMP with off-pirt 106 over petri 115. The XMIT side of port 104 applies this "off-hook" indication as a pecket to PSC 108

over control bus 112 PSC 198 responds to the receipt of this "off-noot" indication, and applies a disistone indication, e.g. a prempt, to the receive

disi-tone indication, e.g., a primpt, to the receive (REC) side of port 104 over opiniral path 112. Port 104 applies the prompt to station 100 over path 114. In response to the prompt, the user at station 100 idels, the extension number absociated with station 101, Station 100 applies the extension number to the XMT side of port 104 over path 115. The XMT side of port 104 over path 115. The XMT side of port 104 applies a pacint containing an indication of the disted number to PSC 108 over control bus 112. PSC 108 contains translation tables in its resin PSC 108 contains translation tables in its main memory (not shown) which executes the eddress of the port associated with the disled digits of the specified destination station, I a., station 101. PSC 108 performs a translation operation to determine the LAN address of the port La., port 105, serving the specified destination station. PSC 108, following the translation operation, generates an impostion auch as ringing to the REC side of part 105 over control path 112. The REC side port 105 applies thes indication to station 101 over path 116. If station 101 is not currently engaged in a call connection, station is not currently engaged in a call connection, station in 101 generales an answer indication to the XMIT add of port 105 over path 117. The XMIT side of port 105 expens this indication to PSC 108 over path 112 to indicate that the call has been answered by station 101. If station 101 is currently engaged in a call connection, station 101 generates a busy indication to the XMIT side of port 105 over path 117. The XMIT side of port 105 applies this indication to PSC 108 over path 112 to indicate that station 101 is currently busy, in the later case, PSC 105 responds to this busy indication and applies 8 busy indication to station 100 via port 104 over control path 112. Station 100, in response to its busy indication, goes 'oa-hook".

Assume that the case is the former, i.e., station 101 has answered, and that PSC 108 received an answer indication. PSC 10s responds to this answer indication and applies an education that the call has been answered to station 100 via port 104 over path 112. Following the establishment of a connection between stations 100 and 101, PSG 105 serves to establish the togical connectivity between ports 104 and 105 having associated stations 100 and 101. the use of logical chambels, Logical chambels are virtual connections that do not require a physical link between two andpoints th maintain a connection, in between two andpoints th maintain a connection, in particular, PSC 108 generates control information and applies this information over control but 112 to early 104 and 105, respectively, associated with eating and called embreints, stations 100 and 101, respectively. The information specifies the address of the calling and called stations to transmitting port 104 which temporarly shored into information. The temporarity shored into information. The temporarity shored in message to the teachestion port the true longical channel connection based on this information. This temporarity is based on this information. The logical connection is maintained until PSC 108 removes it at the conclu-

sign of a data message transmission.

In addition to establishing each connection on a per demand bests, PSC 108 can also establish

dedicated connections are permanent established concurred connections are permissing established connections between stations and are multituded tomat such time as PRC 108 drops of recining unit that connection. This process is not optioned in thinter detail, sinch it comprises no portion of the mapificant. Assume that the connections between stations are established as a content above. established as recting single

Transmission of Data Mestage

The above description describes the precess of extending a connection between pair 104 associated with the called station 100 and pair 105 appointed with the called station 101 through the exchange of control information packets as transmitted to and from PSC 108 over Edition ben 112 Following the estimishment of a logical conjection between estimishment of a logical conjection between estimishment of a logical conjection between estimates 100 estimates the logical connection between ports 104 and 105 having estimated stations 100 and 101 over address 111 and data 110 paths. The following briefly describes the process of transmitting a data indesception the calling is the called stations. 100 and 101 respectively

Port 104 having associated system 100 mornions control bus 112 to determine which of translational a date message can start. Control bus 112 certies framing information which indicates the start and stop of a data transmission. Control bus 112 carries on active training signal to machine that a current data transmission is occurring and therefore, that data 110 and address 111 busine are busy Control bus 118 parties an inactive training signal when no data triphamicsion is occurring, in response to a Jalaction of an inactive signed on pontrol bus 112.
ports 104 through 107 contend for the use of date
110 and address 111 bus to insense a date measure. A single port were bus contrition. Bus contention schemes are well known to inte set. Bus contention comprises no part of the invention. Check bus 113 connects to a system clock (not

showit which provides a disching signal for syn-chronizing was exchange of data and christic ban-missions between the transmitting and receiving stations and PSC 108. Each ron, 104 through 107, and PSC 109 monitors clock bus 113 to determine wheresignals are to be placed on date 110 address 111 and control 112 busses. To effect a data transmission, a part, for example, port 104, tixwey associated transmitting station, 100 write for the control of a state to the control of the co occurrence of a clock signal. Assume that no data hexisti on data bus 110 and address bits 117 and that therefore, control bus 112 is machine. Port to in response to this insulive indication and it occurrence of a clock signal on bus 112, applies and data message which includes an accelule and data portion from station 100 to data bus 110 and siddres portion from station 100 to data bus 110 and siddres bus 111. Assume hather that the address portion from address bus 111 interess helication of antique or address bus 105 having associated station 101 on the designation As previously described, each port 104 drough 11 has unique toerutification of siddress which drough the sidesinant that port. occurrence of a clock signal Assume that no plata h identifies that port.

Policering the application of the softress and dr maksage; to address bus 111 and data bus 11

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respectively, ports 104 through 107 having associalad stations 100 through 103 monitor address 111 and data 110 busses to determine if the data massage extent on data pus 110 is meent for it. Each port 104 through 107 compress circultry to compare that port's unique address with the address outrently extant on address bus 111. If the address on address bus 111 does not match a part's unique address, the essocieted data message is not intended for the part's associated station. However, if a match occurs between the address on address bus 111 and the port's unique address. The essectsted data measings is for that port's associated station. In the previously described example, the address of part 105 matches the address extent on address bus 111. Therefore, the associated data message is subsided for its associated station 101. Port: 105 transmits the data message to its associated station 101. Further details of ports 104 through 107 are described subsequently. In the above described manner data measured are transmitted from a transmitting time of the stations to a receiving and of the staturit over the shared bus structure.

Port 104 - Transmitting Activity
FIG. 2 declares the details of the XMIT and REC side of a port such as port 104 having associated station 100 The details of each port 104 through 107 are substantially surviver and therefore, only a single port is cascillaed Assume that station 100 is sending a cutty massage to a destruction station, for example, station 101 having associated port 105, and therefore the XMIT side of port 104 is purently

antive. Station 100 applies the identity of the recovery station and the associated data massage to XMIT interface 225 on the XMIT side of port 104 over puth 115. XMIT entertene 225 responds to the receipt of the receiving station (density and data message, and applies ac active signal to packet formetter 225 over path 235 to indicate an occurrence of a start of a data transmission. XMIT interface 926 elso collecta the receiving station identity and entire data mass. age and applies this information to packet formatter 225 over path 225. Packet formatter 225 formats this information into a data configuration having saveral types of a formation. Typically, the data configuration comprises several types of information but for sese of description assume that there are merely two types of information. The data configuration peoket comprises the data portion which includes the data message and the desimation portion which includes an indication of the designated reserving station

Following the formation of the information into & prescrete didets configuration packet termster 225 applies the data portion to FIFS 223 over part 232 PIFO 223 temporarily stores the data portion. Packet formptier \$26 pansurrantly applies the destination portion 12 "ministation logic 224 over path 234 Transferon togic 224 performs translation functions on the transmitted destination portion to provide a LAN desination address. The optade of translation

tage: 254 are discussed subsequently Translation logic 226 applies the destination address to FIFO 223 over path 233 FIFQ 223

escentiles the destination saldress with the deta portion to produce a data sacket such as the cree businessed in FtG. 4. The destination address is part of the destination heeder. The mask portion of the destination header is discussed subsequently. Transistion togic 224 see applies an indication of ready to transact to FiFO dentrol \$22 over path 225 tolowing the translation tojunton. FIFO control 222 controls the transmission of the data packet only the LAN busses. In particular, in response to the ready to transmit indication, Fire control 222. transmits this indication to XAST circuit 230 over path 227. In vasponts to the master of this path 227. In response to the receipt or the indication, XXXIII circuit 220 eneme network control bus 112 to detect if addréss 111 bus and data 110 bus are currently busy. As previously described, an insome signé extent on control bus 112 indicates on interest of the 112 indicates on interest of the indicates a bissy condition, when an idle indication is present, XXIII condition, when an idle indication is present, XXIII condition, when an idle indication is present, XXIII condition. circuit, 220 applies an active signal to FIFO corerol 222 over path 227. FIFO control 222, in response to the active signal applies an active signal to FIFO \$23 over path \$29. In response to the receipt of the active signal on path 224, FIFO 823 expiles the data packet to butter 221 over path 230. Buffer 221 steres the data packet unit XVIII circuit 220 retrieves the data packet from burder 220 over path 231 for application to the LAN busces. If the LAN busces are bury, the data packet remains stored in buffer 221 until such time as the blusses become tile. Assume that the busies are itse and therefore, a trens-mission can occur. XIBIT circuit 220 retrieves the data packet from buffer 221 over path 231, and concurrently applies the address header of the data packet to address bus 111 and the data portion of the data packet to data bus 110 in response to the receipt of a clock synature ization signal received on Exit 113 es previously described. In the ebove de-scribed manner, the XMT side of port 104 executive the transmission of a data packet from the associated station, i.e., 100.

The above discussion describes the circuit els menia comprising the XMIT side of port 104 when station 100 is transmitting a data message. Now, assume that port 104(having associated station 100) & in the process of monitoring the LAN busines to determine if a data message extent on the LAN busses is meant for it. The following discussion discribes the circuit elements comprising the REC side of port 104 as shown in FIG. 2.

Port 104 - Receiving Activity
Each port concurrently decodes the address of a data packet extent on the LAN busses to determine if the data massage is intended for the port's associated station, is particular, the REC aids of port 104 monstore the LAN busses to determine if a data partiest is extent on address 111 and date 110 busses. RSC cercuit 200 monitors control bus 112 to determine if a data transmission is occurring. As previously discussed, an active signal indicates lively and an mactive signal indicates wife, Assume that a data vangmession is currently in progress and mat REC circuit 200 his detected the presents of an active signal, REG circuit 200 retrieves the data

packet off of the LAN busses with synchronization eignal, as previously discussed, is applied to REC circuit 200 over path 153. In response to the pions, signal on path 153, REC circuit 200 receives the data and address of the patient over address and data busines 111 and 110, respectively. REC direct 200 applies the data portion of the pucket to data butter 201 over path 206, Butter 201 stores the data portion of the data pucket until it is repleved by FPO 208 over path 217 REC circuit 200 concurrently applies the address of the packet to address buffer 202 over path 208. In response to a need stock synchronization signal on path 113, REC circuit 200 concurrently applies an active signal to data lumer 201 over path 206 and to address/mask completator 203 over path 212, in respectes to the active signer on path 208, data butter 201 applies the cets portion of the packet to PIFO \$16 over path 217. Fit O 205 stores the data portion of the packet until a determination is made as to whether the address. specifies the associated station as an intended doublination of the data measures. Further debits are described subsequently, in response to the active signal on path 212, comparator 203 retrieves the address stored in butter 202 over path 210. Concurrently in response to the active signal on path 212, comparator 203 retrieves the port's unique address from port address 204 over path 214. As previously disputted, such port has a unique address that identifies the associated station for the purpose of receiving data messages.

In response to the receipt of the transmitted address on path \$10 and the port address on path \$10 and the port address on path \$14, comparison 903 performs a comparison operation between the transmitted eathers and the port address. The datalis of comparison 203 are discussed subsequently. If a match accurs between the transmitted address and the port address following the comparison, than the associated data message in the packet is intended for especiated station 100 of port 104. Comparison 203, in response to the address match generates an active signal indicative of an address match to FIFO control 205 over path \$13. FIFO control 205 controls the receipt of the data packet by the associated station. FIFO control 205, in response to the active match signal applies an accept packet signal to PIEC pleast 200 over path 211 to indicate that the incoming data transmission is meant for the associated station. Le. 100 of port 104 and therefore, REC circuit 200 may proceed monitoring for a next data transmission. Concurrently, FIFO control 205, in response to the signal, applies an enable signal, to REC interface 207 and FIFO 205 over path 215 and 216, respectively. FIFO 206, in response to the enable signal on path 218, applies the data message to REC interface 207 over path 219, REC Interface 207 in esponse to the senable signal on path 215, unformats the data message and applies the data message to the associated station. Le., 100, over path 114.

Assume now that comparator 203 does not detect a match between the transmitted address and the part's address. A signal indicative of a non-match is applied to FIFO control 205 over path 213 from comparator 203. FIFO control 205, in response to the

receipt of the nein-metch signal, applies a control signal to PS-0 206. This signal prevents the damp portion of the pocket from being applied to PSEC interface 207 and thereefter, to enduce titl. This obove conditions indicates that the secondaried data message is not interested for part 104's massiciated

In the above described symmer a port warming and receives dela pacieto when such politica are exchanged between a transmitting one and a receiving one of the elations comprising the LAN. New seasons trest a transmitting one, for elaminar of 100, of the stations desires to endress a subject of the plurary of seasons stations, for elaminist of the plurary of seasons stations, for elaminist politics an explanation of the arrangement to actions provides an explanation of the arrangement to actions the broadcasting from one station to it least that stations included in the LAM arrangement shows in FRC. 1.

Actives Marriag for Balacting Brossbott
As prescounty described, each part in absorbatid
has a unique address. The unique address defining
the identity of the intended destination of renewhity
station. To achieve assective broadcasting, a trainmitting strict generates a single data meeting
having a single unique address and a saigle address
the combination of a music and a single address
effectively creates a generic subset address. The
effectively creates a generic subset address. The
effectively creates a prescribed subjet of reconfing
message to passi a prescribed subjet of reconfing
stations. The following description cleaves in the
arrangement for providing selective broadcasting
capability in a LAN.

A user as a transmissing station requestry a selective broadcast transmission. To statisfie a selective broadcast request, the user dise a special selective broadcast request, the user dise a special secreta code at the transmission exhibits methods of activating a service request are substituted as depressing a feature britten; redwerf, statisfied as a special access code to effectuate administrative broadcasting. An indication of this selective broadcasting request is applied as a packet vid. the resolution port to control bus 112. PSC 108 receives this request over control that 112 and implements an operation to activate the breatcast implements an operation to activate the breatcast capability. In particular, PSC 108 supries the prescript to the transmisting station to identify stations are to the transmisting stations to identify stations are to be included, established confertion of which stations are to be included, established confertion between the stations in the minuter previously described.

described.

Concuspently, PSC 108 scene a translation table matrix secred in the memory (not shows) which delines officered possible of such a fractions. An example of such a instruction of such a fraction two bit sidesee and two bit mast is lituated in FIG. 5. Associated with each identified subject in a mest. The mast serves to identify which bits in a unique thereshilled address are "den't date" bits such that the remaining non-court care bits. J.e., the significant bits, effectively create a generic subset

setines the ports of the associated intended desinetion stations. For example, if a transmitting station
generates a data message having a destination
address of CO wherein the destination address is
associated station 100 and the transmitting station
destres that only applied 100 reaches the destination
destres that only applied 100 reaches the data
message, a transmitted music of CD to specified such
that built address bits of the transmitting destination
sideness are significant. Therefore, only station 100
training as address of CO receiver the data message.
However, if the transmitting station destres to
transmitts a single destination address of CO
which is the address sassociated with station 100, a
mastic of O1 is transmitted in administration with the
transmitted destination address. Their is bit of the
transmitted destination is significant.
Therefore, only station 100 and 101 having addresses of CO and O1, respectively, received the time matrix
table of FIG. 6 defines the appropriate mask for a
specified transmitted destination address when the
designished subset of receiving stations is described
subsectived transmitted destination address when the
designished subset of receiving stations are
shown in the table of FIG. 8.

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An effective generic subset address may also be created by calculating the appropriate mask for a destination based on a specific transmitted destination address and the intended destination addresses of the receiving station. However, for seas of description, assume the table patrix is utilized in the currently described enthodisting.

Following the matrix table transmitting part's translation table included in a port's translation table included in a port's translation topic 224 of PIG. 2, the appropriate mask selection based on the transmitting described received to a portion addresse and the specified received matrix selection based on the transmitted described addresse and the specified received.

Following the matrix table light-up operation, rec108 writes into the transmitting part's translation
table included in a port's translation logic element
such as translation logic 224 of PIC. 2, the
exprepriate mask assession; bessed on the transmitted destination eddress and the specified receiving stations. The transmitted destination address, as
previously described, is the unique address of one of
the members of the subset. Following the mask
estection, the port associated with the transmitting
station applies a data packet comprising the data
message, the address and the mask (see PIC. 4) to
the IAN busess.

As previously described, each port includes address decoding logic and asch port, concurrently, decodes the jurismitted address to determine it is transmitted data message is intended for its associated station. The address/mask comparator, previously described with reference to comparator 203 of FiG. 2, included in each port performs the decoding function as detack if the sesociated data message is for the port's associated station. The debate of the mark decoding logic are discussed states, marches the port's associated station. The significant bits, the discress with respect to the significant bits, the data message is specied to that port's associated station. If the generic assessments port's associated station. If the generic assessment statices does not anatch the port's address with respect to the significant bits, the data message is

not applied to that part's established deploy. The tollowing description describes in depails branching port's furtion in generating a populative branching color message between a transmitting color of the colors and defent two procedure disposes.

Assume that ession 100 hes requested a selective broadcast trainmission and has destinated a selective troi and 100 as the uthinste destination of a common data message history and private of the portain administration of the portain included in the subabl. As Fig. 1 stations 101; and 101; and 102, respectively, have unique activement 01; and 11, respectively, have unique activement 01; and 11, respectively, have unique porta associated with one of the destination station and interest of the actives of part 105 having associated station 101 is used, and therefore, the transmitted pidrose is 01. For each of description, as a single such that stations 101, 102 said 103 are associated, with addresses 60, 01, 10 said 11, respectively. This is to remain technique out of the matrix table shows in Fig. 6.

respect to the matrix table shows in FIG. 6.

As the static table of FIG. 8 implicates if the transmitted destination address is a 01 and the specified receivable assistant as a set of the processes of the matrix table of the second total and the derivative set of the processes 
Fig. 5; ituetrains the appearance of a translation table as it appears in translation logic \$24 of part \$34 of the station tool in translation logic \$24 of part \$34 of the station tool in translating to stations 100 is translating to all stations 100, \$01, \$102 and \$103 at time \$03.FIG. 6 further illustrates the oppearance of a translation table as it appears in a translation toget all stations 100 and 103 at \$46 505, and, alteresticing to stations 902 and 103 at \$46 505, and, alteresticing to stations 907 and 103 at \$46 505, and, alteresticing to stations 100 and 102 at the 505. These tables are marriagely illustration of four pessible broadcast translation. Difficultat tables configurations occur depending on which stations are translating and which stations are incohing. For explanation purposes, all such variations are translation purposes, all such variations are translation purposes, all such variations are translation purposes. All such variations are translation purposes, all such variations are translation. The matrix tables of FIG. 5 shintration

the possible subsets evaluate for a two-bit address and two-bit mask execution.

An FULL 6 Municipes at line 502, the identity of the transmitting station is 100 and the identities of the destination stations are 101 and 103 respectively. Station 100, as previously decusted, transmits the destination address, a UI. of destination station 101 concernation accrease, a us. or construment extens) sur-which is included in the authors of receiving stations. A single unique address compared with an appropri-ate maps establely forms a generic subset address. The subset destruction addresses of the extended requiring settings are O1 and 11. Incapactively, To actions selective brosscanneg to both destination stations unliking a single accress, a mark of 15 is provided by PSC 108. The mark identifies that a when I mare the appears in the livet bit position, B). and a significant bit appears in the second bit position, \$2 as shown at times 501 and 502. The masked address is ellectively a X1 where X ordicates a "don't care" supus in a test bit phaition. B1. Only addresses that have a 1 at the 82 position will receive the associated data massings. Any station having a 0 in the 52 position will not receive the associated dela message. Therefore, for a transmitted destination address of 01 priers the subset destination addresses are Ot and 11. a 10 mask is appropriate. The effective masked address of X1 is formed to authors selective broadcasting from

station 100 to stations 101 and ft. Fig. 5 qualifies at times 501 and 503 turities examples of prosdessing from different stations to distarant destination subsets. For example, il sistam 100 wiches to present a common data message to destination stations 100, 101, 102 and 103, a mask of 11 is provided. The 11 mask indicates that the sodrass this in positions 81 and 32 are both "don't dates, and staretore, every destriation regardless of unique address assignment will recove the message since no supplicant actress bits remain. The translation lable for port 105 dustrotes at leses 534 through 506 further broadcast transmission gases... ples for two different subsets. The "don't care" bil positions and the significant bits vary depending on the generated transmitted destination address and trie desimation addresses. The broadcast transmission from station 100 to 101 and 103 at lines 501 and 602 is the only example discussed in further detail

Following the creation of an effective generic subset address as shown in FIG 5, translation logic 224 applies the transmitted destination address and the destination mask to FIFO 223 over path 233. As presidually departitled. FIFO 223 impends the destina-tion header to the data message portion of the data packet. The data packet for splective broadcasting comprises a della message, a desuration address and a mest. This data pecket configuration as proviously described is shoven in FIG 4. The data packet is applied to the LAN busies in the manner

previously described. Assume that the doos packet is now extent on eddress 111 and "att 110 busies, and the REC side of each port retrieves the data packet from the LAN burgase in the manner previously described. As previously described, all ports commiss the same circulty and operate amplety.

Assume that the following description is of Station 101 and that the cursuit elements of MG. 2 are applicable. Accurage forther that the REC arde of post 100 has detectaristic presumes of a data portlet and that the transmitted address and the mask has activated the address/mask comparator.

14

Address Mask Decoding
PG. 2 decises the dotes of an address much
comparator such as comparator 203 districted in
PG. 2 Comparator 203 of PG. 3 shows elecuty comprising the mask decoding logic to policimine if the associated data massage is exempled for the port's associated station, in paracular, the profut detects the presence of a "don't care" has with respect to the transmitted destination to hee. The don't care" bit attentions which bit(s) by sit position in the receiving port's unique appress to magniticard The fermining being in the remain care. The detection of 'don't care, pur states defines a generic subset address. The effective generic subset address is compared to the Logue address of rath boat joined an associates received Station to deligimine of the associated management data message is intended for the port s absociated Station as a reumber of the entered business of the property accomple, the management business of the

a 0 in the B1 position and a 1 in the B2 bosinon and the mask applied to a 1 in the 81 potentiand and in the 82 position. See FIG. 5, times 501 and 502 or the translation table for Bort 104. The port sources of post 105 to Oliverery Old in the B1 postopy and 1 4 m. the BZ position

As previously described, the post's address is stand in post address 204 of Fig. 2 and comparation address the transmitted destination address over transmitted address pain 216 and the post address over transmitted address pain 216 and the post address over out 214. Assume that the paints 210 and 214 comprise several pains where seco bein carries & appealed one, that is B1 and 82 of the transmitted destination aggress the mask and the port address

The lollowing entur logic operations are concurrently executed. However, for ease of nescription. each but on pach lead and each gate function will be wewed separately The B1 out of the post address a 0, is applied to exclusive NOR gate 300 over port address B1 path and the B1 ort of the transmitted South and Royal Fig. 18 accorded to the control of or a 0 on point actorness B1 pain and a 0 cm wasterfailed authors B1 path provides an output of 3 on plant 305 The 1 on path 305 is applied to GR gard 301 Concurrently, tine B1 and at tine mastic & 1, is applied to QR gate 301 over mask 81 patri. The compension of a 1 on path 305 and a 1 on make 81 posts to OR.

Sate 301 provides a 1 on path 306. Concurrently, the 52 bit of the stort docreas a 1 is spoked to excrusive NOR gate 302 over port address B2 park and the B2 bit of the transmitted address. a 1. a applies to exclusive NOR date Stir over transmitted address E2 path. The combination of a 1

0 255 767

13

the possible subsets existing for a two-bit address

and two-bit mask condition.

As FIG. 6 illustrates of fine 502, the identity of the As FIG. 6 illustrates at find \$02, the identities of the transmitting station is 100 and the identities of the destination stations are 101 and 102, respectively. Station 100, as previously descrited, transmits find destination address, a 01, or destination station 101 which is implicated in the subject of receiving stations. A single unique address continued with an expropriate-mainty effectively forms algebraic subject address. The subject destination addresses of the insended requiring stations are 01 and 11, respectively. To appear selective broadcusting to both destination soldone selective broadcusing to both destination stations utilizing a single address. 5 musk of 10 is provided by PSC 108. The musk identifies that a don't care till appears in the first bit position. B1. and a significant bit surpairs in the second bit and a significant of supplement of the position, B2 so shown at lense 501 and 502. The masked address is effectively a X1 where X redicates a "don't ours" street in a limit bit position. B1. Only addresses that have a 1 or the B2 position will addresses that have a 1 or the B2 position will receive the associated disa message. Any station having a 0 in the SE polition we not recent the speciated dark message. Therefore, for a transrekted destination address of 01 where the subset destination matrices are 01 and 11. 8 10 mash is appropriate. The attacting masked address of X1 is formed to achieve selective broadcasting from station 100 to stations 101 and 103

FIG. 5 Qualitates at lines 501 and 503 turther examples of broadcastery from different stations to different destination subjets. For example, if station 100 wishes to broadcast a common date message to destination stations 100, 701, 102 and 103, a mask of 11 is provided. The 11 mask indicates that the address bits in positions B1 and B2 are both "gon"; Cares" and therefore, every destination regardless of unique address assignment will receive the message since no significant offices bits remain. The translation table for post 105 distrates at lines 534 through 506 further breadcast transmission examples for two different abosets. The "don't care" but positions and the significant bits vary depending on the generated tronsmitted destination address and the destination addresses. The broadcast transmission from station 100 to 101 and 103 at lines 501 and 602 is the only example discursed in further

Following the creation of an effective generic: subset address as shown in FIG. 5, translation logic 224 applies the transmitted destination address and the destination mask to FIFO 223 over path 233. As previously described. FIFO 223 appends the destination header to the data message portion of the data pecket. The data packet for selective broadcasting comprises a data message, a destination address and a mask. This data packet configuration as previously disscribed; is shown in FIG. 4. The data packet is applied to the LAN busses in the manner previously described.

Assume that the cars packet is now extent on address 111 and face 110 busses, and the REC side of each port retrieves the data packet from the LAN butses in the mariner previously described. As previously described, all ports comprise the same

1 . .

circulty jand operate similarly.

Assume that the following description is of receiving port 105 having associated distinstant station \$71 and that the tricuit eliminate of PiG. 2 are applicable. Assume further that the SEC adds of fort 105 has sletted the presence of a lists pother and that the transmitted address land the trible has activated the address land the trible has activated the address land to operate.

14

Address Math Desource
Fill is discisses the details of an address mash
comparator such as comparator \$13 discretized in
Fill. 2. Comparator 203 of Fig. 3 shows circles Fill. contraining the mest decoring topic to extended for the port's estociated station, in particular, the circular detects the presence of a "don't case" but want respect to the transmitted despitestion stochast. The "den scare" be membes which britis by the position in the received port's unique schreet it interpretation between the remaining between the remaining between the remaining between the description of 'gon | due' but effectively defines a phrenc author stidents. The effectively defines a phrenc author stidents the effectively defines of rach port having an actionated transmissional processes of rach port having an actionated transmissional processes of when the extending transmission are action as a member of the posts a account in the present example, the transmissional processes are present example, the transmission and a life three fixed postson and a life thre

the final applied in a 1 m the 5 t postedy and 2 divine 62 position. See FIG. 5, being 501 and 502 of it translation sable for port 104. The part address part 105 m 03 where 0 is in the 51 postedy and 1 is

the BP position

As previously described, the port's address studed in part address 204 of Fills 2 and comparate 204 receives the transmitted pestimation indice over transmitted address pain 216, and the province transmitted address pain 216, and the province transmitted address pain 216. address over sain 214. Assume that the peths 2 and 214 somprise several paths where each property a specified one. Plat is B1 and B2 of 1 transmitted desiration adjusts ine mask and port address

The tollowing circuit logic operations are conc really executed However, for pase of assettis each bit on each lead and each gale byrotion tole separately The BT on or the part appret O is applied to exclusive NOR gate 300 over t address B1 path and the B1 bit of the transmi aggress, 5 0. e applied to exclusive NOR gate over transmitted address (3) buth the costroins of a 0 on port address S1 pum and a 0 on without of a D on port address S1 path and a D on transmit appress S1 path provides an output of 1 on path. The 1 on path 305 at applied to OR gate Concurrently, the B1 on it Dip thank, a 1 of applied OR gate 301 over mask S1 path. The combert of a 1 of path 305 and a 1 of mask S1 path it date 301 provides a 1 on path 305.

Concurrently, the S2 bit of the port orders are applied to the path in S2 bit of the part orders. It concurrently, the S2 bit of the part orders are

social to exclusive NOR gate 302 point point ack \$2 path and the 82 bit of the transmitted addin e another to exclusive NOR gate 302 transmitted address E2 path. The administrance

on path 938. AND gate 304 concurrently rac

in the manner previously described.

on the port address 22 path and a 1 on the transmitted address BZ path provides an output of on path 307. The 1 on path 307 is applied to CR gett 303. Concurrently, the 62 bit of the meek, a 0. is applied to CR gate 303 over mask 52 path. The combination of the 1 on path 307 and a 0 on the snask B2 path to OR gare 303 provides an output of 1 input of a 1 on path 308 and a 1 on path 308. The combination of the 1 on path 308 and a 1 on path 30\$ ΤĎ provides 8 1 output on path 213 from AND gate 304, This 1 indicates that the masked address is exectively generic to the port's unique address such that the associated station of the port is a member of the aubset. Occuparator 203 generates a match signal to FIFO control 205 over path 213, and FIFO 205 enables FIFO 205 over path 216 so as to allow associated station, 101, to receive the data message

The above-described pirout logic imputed the "don't care" status to the first bit, 81, of the port's unique accress such that only the 82 bil was significant in determining whether the transmitted data message was intended for this associated station.

Now, excerne that the compenstor illustrated in FIG. 3 is included in the REC side of port 107 having associated ataben 193 which is another member of the designated subset of receivers. The #ddress of port 107 is 11 and as proviously described, the mask applied to the transmitted destination address, 01, is a 10. The "don't care" bit is in the 81 position. Exclusive NOR gate 300 receives a 1 ever port address &1 path and a Diover transmitted address 81 path. The combination provides a 0 output en ceth 305. The combination of a 0 on path 305 and & 1 on mask B1 peth to OR gate 301 provides a 1 output on path \$06. Concurrently, exclusive NOR gata 302 receives a 1 over port address 82 path and a 1 over transmitted address B2 path. This combination of \$ 1 and a 1 to excusive NOR gate 302 provides a 1 output on path 307. The combination of a 1 on path 307 and a 0 co mank 82 path to OR gate 303 provides a 1 output on path 308. The combination of a 1 on path 308 and a 1 on path 308 provides a 1 output from ARD gate 304 over path 212. This 1 indicates that the mesked address is effectively generic to the cont's unique address such that the associated station of the port is a mamber of the subset, Associated station 103 will receive the data message in the majorer previously described.

The above-ouscided circuit logic imputed the "don't care" status to the first bit. Bt. of the poil's unique eddress such that only the 82 bit was signations in determining whether the transmitted data mescape was intended for the associated station.

Now, assume that the comparator succreted in FIG. 3 is included in the REC side of port 108 having executed station 102 which is not a member of the designated subject of receivers. The address of port 106 is 10 and, as previously described, the mask applied to the standmitted address. 01. is a 10. The "don't pare" he is in the 81 position. Exclusive NDR gate 500 receives a 1 over port address \$1 path and

a 0 over transmitted address 81 path. This combina-tion provides a 0 output on path 305. The combina-tion of a 0 on path 305 and a 1 on mask 81, path to OR gate 201 provides a 1 output are path 305. Consurently, exclusive NOR gate 303 receives a 0 over port address B2 path and a 1 over transmitted ever port address B2 path end in 1 deet transmitted address B2 path. This combination provides a 0 curput on path 307. The combination of a 0 on path 307 and a 0 on mask B2 path to OR gate 303 provides a 0 output on path 308. The combination of a 0 on path 308 and a 1 on path 305 provides a 0 output from AMD gate 304 over path 213. This 0 indicates that associated station 102 of part 105 is not a mamble of the subset and the reference, the date of the subset and the message will not be received by it. The masked address in not affectively generic to the port's unique address. The data portion of the packet is not applied to etation 102 in the manner previously described.

The above description discusses the application of a two bit music to a two bit address to reach a number of different subsets. Ye reach every possible combination of ports having associated stations which comprise subsets, the mask; for a two bit address requires expansion to additional bits which define mask configurations which allow a transmitting station to reach any combination of receives it appetites. Additionally, a larger suddress than two bits part by masked in order to achieve ablanting may be musiced in order to echieve extentive broadcasting to a plurality of ports having sesectsted stations, However, for ease of description only a two bit address and mask were described. Further, the comparator cliquidry requires more complex the comparator cardidly requires more compara-logic to provide the appropriate decading function for a larger mask and/or address. However, only a few gate logic functions were disclosed to simplify

the explanation of the mask decoding process. In the shows-described manner, selective broadcasting is achieved from a transmitting one of the stations to two or more stations. A single address is manipulated with a mask as planted from a matrix transmitting to be to be transmitted to be t address. The mask is included in the address portion of a data pecies. The transmitted data pecies is rectived by a port. The port comprises circuit logic to determine the significant bits in the transmitted address and compares the porresponding significant bit(a) of the port's unique eddress to the offactive generic cubact address. If a match occurs, the associated station of the port is a member of the subject end it will receive the transmitted data massage. If no major occurs, the associated station of the port is not a member of the exposit and it will not measure the transmitted fata. In the above-descrived manner, selective breadcasting is achieved in a multi-user emitronment.

Write a spacing probodiment of the invention has been disclosed, variations in intructural datail, within the acops of the appended claims, are possible and are contemplated, There is no intention of limitation to what is contained in the abstract or the exact disclosure as herein presented. The above-di scribed arrangements are only strustrative of the application of the principles of the invention. Normally, other arrangements may be devised by those

skited in the ship art without departing from the spirit and the acase of the invention.

#### Claims

1. Iri a Local Area Natwork (LAN) having a selective treadcasting arrangement for transmitting messages to a subset of a plumility of stations (100-103) of said LAN wherein each of said stations (100-103) has a unique address. said arrangement comprising:

magne (108, 224) responsive to a transmitting one (103) of said stations requesting a selective broadcast for generating a most with a unique address to form an effective address generic to each member of said subset of stations;

mapns (220-223) for transmitting said effec-tive generic address together with an exsocistad date massage from said transmitting station (103) to said plurally of stations (100-103); and

means (202-204) at sects of sed plurality of stations (100-103) for translating said effective generic address to determine it said associated data message is intended for seld station as a member of said subset.

2. The arrangement of claim 1 wherein said

arrangement turther comprises: means (224) for generating said unique address associated with a single member of said subset;

mans (102) for epecitying such unique address for each member of said subset;

means (108) for selecting said mask based on each said specified unique address and said generates unique address; and

means (108) for identifying a portion of said generated unique address which corresponds to a like portion of each specified unique address for each member of said subset to form said effective generic address.

3. The arrangement of claim 1 wherein said arrangement further comprises:

means (200) for receiving said effective peneric address at said plurality of stations:

means (204) for concurrently providing an accisted unique address at each one of said pairedly of stations; and

means (202) for comparing sold effective their address with said provided essociated their address of each one of said plurality of unions to determine in occurrance of a match.

4. The arrangement of claim: 1 wherein said nacional further comprises:

means (205) for enabling a fransmission of id suspeciated data message to each of said inform as members of said subset when said sective generic address matches said like section of said provided responsed unique sections of said provided responsed unique sections.

address tollowing said compartion.

ii. In a Local Area Network (LAN), a method the describeting data messages to a subset (100-101) of a plurality of receiving stations

(100-103) whereif each station (100-102) has a unique eddress, sald method comprises the steps of:

providing in a presentiting one (100), of sold stations a mask together with a unique elicipite to forte on elicipite echiese generic to each member of cald subset (100-101) of stational transmitting said elicipite generic spiritual together with an associated claim message from

of the substitute of (CO1) notices builtings to stations (100-109); and

translating said effective generic editess to determine if said executated data meshapi is intended for each station (100-103) or a member of said subject (100-101).

ii. The method of claim 5 wherein said method

turther comprises the stept of:
providing said unique address estimated
with a preparated member (100) of said substat;
apacitying sign unique address for each
member of said subset (100-101);

splanting self mask based on each paid splanting accepts for sect member of hald subset (100-101) and said provided brights eddress: and

identifying a portion of maid providing tricque address which corresponds to a like portion of , each specified unique address for eq en reenner of seld subset (100-101) to form seld

effective genefic address.

7. The method of claim 5 wherein seld shethod further comprises the steps of:

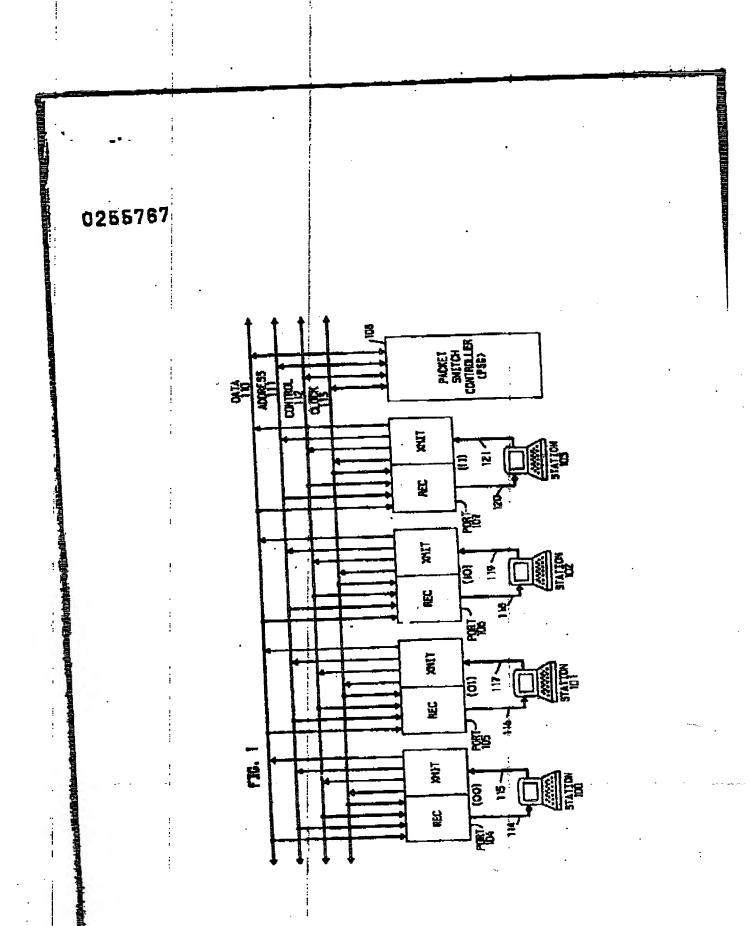
receiving said adjective generic editreps et-said plurally of stations (100-105);

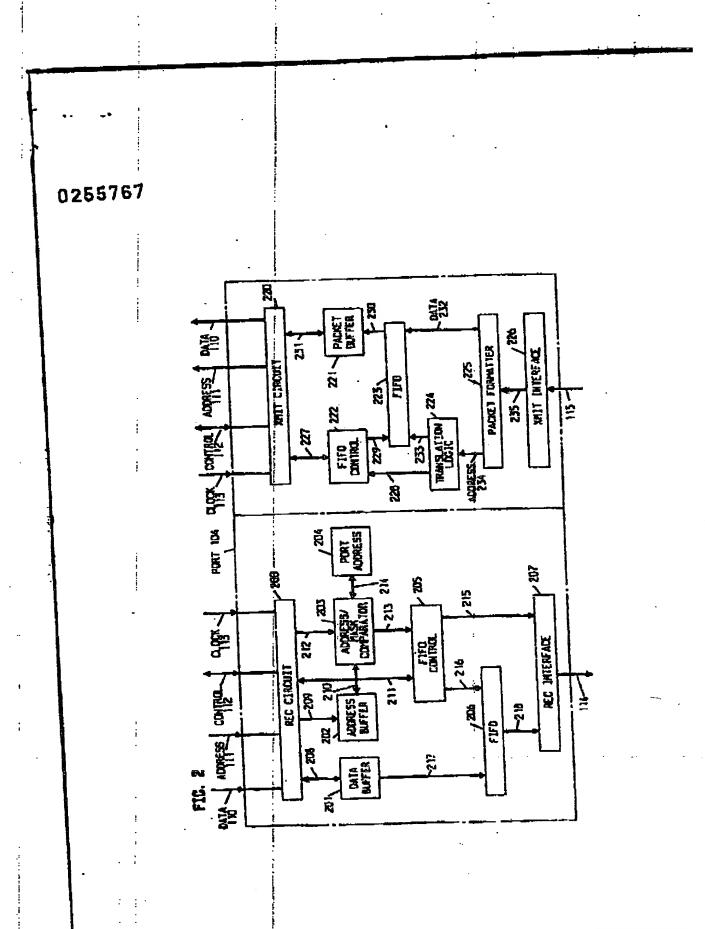
concurrently, providing an assigned address of each one of said plurality of stations [100-103); mr\$

such one of earl effective greaters (503-103); such said provided stistened unique districts of the control of to determine in occurrence of a metals

8. The metitod of sleim 5 wherein and printhed further complises the steps of:

ensoting a transmission of said escolated data measure to each of said stations (100-105) as members in said subset (100-101) which said stilective defects eddress matches and Bos portion of such provided assigned enlaws address of one of said phreatly of stations (TOD-103) tollowing said comparison.





•						_	
ie.	FIG. 4	DATA	MASK		ADDRESS ADDRESS		
•		PATA	ğ	DESTINATION HEADER	Ħ	مسبب	
				Mr. Tenn			:
FTG. 55	r.		RANSLATION TA	BLE: FUN TO BE TO THE TO BE TO THE TO BE TO THE TO	TRANSMITTED		FEG
	SHITTING	DESTINATION	TRANSMITTED DESTINATION	DESTINATION ADDRESSES	DESTINAL L	- 1	到
	DENTITY	DENTITY	ALTERNATION		Bi B	22	100
,J			B: 02		-	0	
ריז פֿ	8	101, 103	0		1-	-	×
8	100	100. 101. 102. 103	0	00,01, 10, 11	-	1	
			TRANSLATION 1	TRANSLATION THREE: PORT 105	1	102	FFFEC
	TRANSMITTING	DESTINATION	TRANSHITTED DEST INGITOR	0.511W110W		夏	35
	毛語	DENTITY	ADDRESS		=	22	81
-			18		1	-	-

102, 103

q255767

			l i					_			<b>—</b> ,	
	HASK TRANSHITTED 11	RECEIVING	100, 101, 102, 103	RECEIVING	STATION 100, 101,	AFFETVING	STATION	102, 103	RECEIVING	(00, 101,	102, 103	
	MASK TRANSMITTED 10	RANSMITTED 10 10 STATION 10C, 10Z RECEIVING STATION 101, 105			RECEIVING STATION 100, 102			RECEIVING STATION 101, 105				
	MASK TRANSMITTED		RECEIVING STATION 100, 101		RECEIVING STATION	100, 1001	RECEIVING	501, 201		RECEIVING	102, 103	
•	HASK TRANSMITTED	7	RECEIVING STATION IDO	1	RECEIVING STATION	101	RECEIVING	STATION		RECEIVING	51A1100 103	
	ADDRESS TRANSMITTED BY	STATION	STATION 100 DESTINATION ADDRESS	8	STATION 101 DESTINATION	ADDRESS 01	STATION 102	CESTINATION ADDRESS	Q	STATION 103	DESTINALIUM ADDRESS	



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Publication number:

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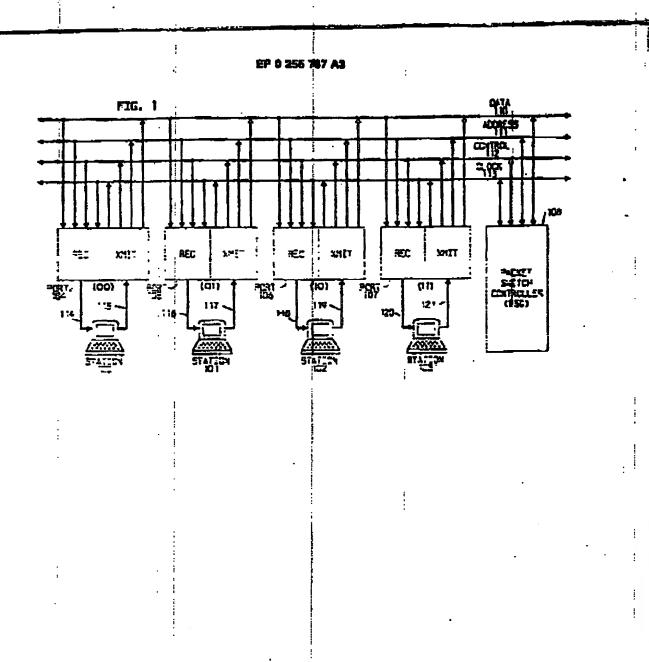
#### EUROPEAN PATENT APPLICATION

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- (E) Date of Gling: 22.07.67

(P) Int. CL. HO4L 11/18 , HO4L 11/16 , HO4L 11/20

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- Dete of publication of application:
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- Designated Contracting States: DE FR GB IT NL SE
- Date of deferred publication of the search report: 04.04.90 Bulletin 90/14
- © Applicant AMERICAN TELEPHONE AND TELECRAPH COMPANY 550 Medison Avenue New York, NY 10092(US)
- | Inventor: Breun, Arthur Rechimen | 7 Penrhym Road | Woodridge Commections 96595(U\$) | Inversor: Franklin, Andrew Dejumph | 2480 18th Street | Boulder Colorada 80309(US) | Inventor: Popenelle, Gerard Joseph | 4408 East 122nd Avenue | Thronton Colorado 80241(US)
- (N) Representative: Buckley, Christopher Simon Thirsk et al Western Electric Company Limited 5 Mornington Road Woodford Green Essex (CS OTURGE)
- Selectiva broadcasting arrangement for local area networks.
- E in a Local Area Network (LAN) comprising a glurality of stations having associated ports where stach port has a unique address, an arrangement for providing selective prooficesting to a subset of the parallity of stations is disclosed. A transmitting one of the stations designates the subset by specifying to ar more receiving stations. Thereafter, the transanding station generates a single date message having a single specified address of only one member 6" Un subset. A packet switch controller defines a Marks that identifies which existing are included in 15 % subset. The packet switch controller provides the ppropriate meak to the transmitting station which Minen transmits a data packet comprising a data meacarego, the specified address and the appropriate mark to the LAN. Each port decodes the transmitted peopled address and the mask to determine if the transmitted message is intended for its essociated Station as a member of the subset.

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## EUROPEAN SEARCH REPORT

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EP 87 30 6489

	DOCUMENTS CONSIDE	PED TO BE RELEVAL	NT	
	Chicles of descript with faciles of retirese general	den, where appropriate,	Referent to chalge	CLAMEFICATION OF THE APPLICATION OF CLA
X	FR-A-2 541 052 (ELECT * Abstract; page 2, 11 line 29 - page 9, line	RICITE DE FRANCE)	1-8	H 04 L 11/18 H D4 L 11/16 H D4 L 11/20
X.P	EP-A-0 200 447 (EMI)  Abstract; page 2, 1 line 25; page 6, line 16; figure 1 "	ine 27: - 6805 4.	1-8	
^	US-A-4 131 SBI (ROBI * Abstract; column 2, 3, line 6; figures 1,	11me 23 - column	1-8	-
<b>A</b>	IBM TEMBNICAL DISCLOS 20, no. 9, February 1 Hew York, US, D.J. Zi comparison for contro variable device range	1978, page 2025, 19(ERMAN: "Address )] unit with	1	,
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*	Mountain, B.C., 10th 1985, pages 172-179, et al.: "Host groups extension for datagr "Abstract; page 172 lines 13-18	SIOM, Whistler - 13th September ACH; D.R. CHERITON A multicast	ł	H 04 L G 05 F
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